IN THE CLAIMS

(1) Please amend the claims as follows:

1-18 (Cancelled)

19. (Renumbered Original Claim 52) A single wall carbon nanotube having one or more substituents covalently bonded to a sidewall of the single wall carbon nanotube.

20. (Amended and Renumbered Original Claim 53) The single wall carbon nanotube of claim 19, wherein the substituents are selected from the group consisting of alkyl, acyl, aryl, aralkyl, halogen, substituted thiol, unsubstituted thiol, substituted amino, unsubstituted amino, hydroxy, and OR', wherein R' is selected from the group consisting of hydrogen, alkyl, acyl, aryl, aralkyl, halogen, substituted thiol, unsubstituted thiol, substituted amino, unsubstituted amino, a linear carbon chain, and a cyclic carbon chain.

21. (Amended and Renumbered Original Claim 54) The single wall carbon nanotube of claim 20, wherein the linear carbon chain or the cyclic carbon chain or both is substituted with at least one heteroatom.

22. (Amended and Renumbered Original Claim 55) The single wall carbon nanotube of claim 20, wherein the linear carbon chain or the cyclic carbon chain or both is substituted with one or more of the group consisting of =O, =S, hydroxy, an aminoalkyl, an amino acid, and a peptide of 2-8 amino acids.

23. (Amended and Renumbered Original Claim 56) The single wall carbon nanotube of claim 19, wherein the substituents are alkyl or phenyl.

24. (Amended and Renumbered Original Claim 57) The single wall carbon nanotube of claim 19, further comprising metal complexed to at least one of the substituents.

25. (Twice Amended and Renumbered Original Claim 58) The single wall carbon nanotube of claim 24, wherein the metal is selected from the group consisting of Group VIB ~~VI B~~ metals and Group VIIIB ~~VIII B~~ metals.

26. (Amended and Renumbered Original Claim 59) The single wall carbon nanotube of claim 19, wherein the amount of substituent bonded to carbon atoms of the single wall carbon nanotube is at a substituent to carbon ratio of from (a) one substituent to about 26 carbon atoms to (b) one substituent to about two carbon atoms.

27. (Amended and Renumbered Original Claim 60) The single wall carbon nanotube of claim 26, wherein the amount of substituent bonded to the carbon atoms of the single wall carbon nanotube is at a substituent to carbon ratio of from (a) one substituent to about ten carbon atoms to (b) one substituent to about two carbon atoms.

28. (Amended and Renumbered Original Claim 61) The single wall carbon nanotube of claim 27, wherein the amount of substituent bonded to the carbon atoms of the single wall carbon nanotube is at the substituent to carbon ratio of from (a) one substituent to about three carbon atoms to (b) one substituent to about two carbon atoms.

29. (Renumbered Original Claim 62) A product made by the process of covalently bonding substituents to carbon atoms on a sidewall of the single wall carbon nanotube.

30. (Amended and Renumbered Original Claim 63) The product of claim 29, wherein the substituents are selected from the group consisting of alkyl, acyl, aryl, aralkyl, halogen, substituted thiol, unsubstituted thiol, substituted amino, unsubstituted amino, hydroxy, and OR', wherein R' is selected from the group consisting of hydrogen, alkyl, acyl, aryl, aralkyl, halogen, substituted thiol, unsubstituted thiol, substituted amino, unsubstituted amino, a linear carbon chain, and a cyclic carbon chain.

31. (Amended and Renumbered Original Claim 64) The product of claim 30, wherein the linear carbon chain or the cyclic carbon chain or both is substituted with at least one heteroatom.

32. (Amended and Renumbered Original Claim 65) The product of claim 30, wherein the linear carbon chain or the cyclic carbon chain or both is substituted with one or more of the group consisting of =O, =S, hydroxy, an aminoalkyl, an amino acid, and a peptide of 2-8 amino acids.

33. (Amended and Renumbered Original Claim 66) The product of claim 29, wherein the substituents are selected from the group consisting of fluorine, alkyl and phenyl.

34. (Amended and Renumbered Original Claim 67) The product of claim 29, further comprising the step of complexing a metal to at least one of the substituents.

35. (Twice Amended and Renumbered Original Claim 68) The product of claim 34, wherein the metal is selected from the group consisting of Group VIB ~~V-I-B~~ metals and Group VIIIB ~~VIII-B~~ metals.

36. (Amended and Renumbered Original Claim 69) The product of claim 29, wherein the amount of substituent bonded to carbon atoms of the single wall carbon nanotube is at a substituent to carbon ratio of from (a) one substituent to about 26 carbon atoms to (b) one substituent to about two carbon atoms.

37. (Amended and Renumbered Original Claim 70) The product of claim 36, wherein the amount of substituent bonded to the carbon atoms of the single wall carbon nanotube is at the substituent to carbon ratio of from (a) one substituent to about ten carbon atoms to (b) one substituent to about two carbon atoms.

38. (Amended and Renumbered Original Claim 71) The product of claim 37, wherein the amount of substituent bonded to the carbon atoms of the single wall carbon nanotube is at the substituent to carbon ratio of from (a) one substituent to about three carbon atoms to (b) one substituent to about two carbon atoms.

39. (Amended and Renumbered Original Claim 72) A product made by the process comprising:

(a) fluorinating a single wall carbon nanotube; and

(b) reacting the fluorinated single wall carbon nanotube with a compound containing a substituent to covalently bond the substituents to the single wall carbon nanotube.

40. (Amended and Renumbered Original Claim 73) The product of claim 39, wherein the substituents are selected from the group consisting of alkyl, acyl, aryl, aralkyl, halogen, substituted thiol, unsubstituted thiol, substituted amino, unsubstituted amino, hydroxy, and OR', a linear carbon chain, a cyclic carbon chain, and peptide, wherein R' is selected from the group consisting of hydrogen, alkyl, acyl, aryl, aralkyl, halogen, substituted thiol, unsubstituted thiol, substituted amino, unsubstituted amino, a linear carbon chain, and a cyclic carbon chain.

41. (Amended and Renumbered Original Claim 74) The product of claim 40, wherein the linear carbon chain or the cyclic carbon chain or both is substituted with at least one heteroatom.

42. (Amended and Renumbered Original Claim 75) The product of claim 40, wherein the linear carbon chain or the cyclic carbon chain or both is substituted with one or more of the group consisting of =O, =S, hydroxy, an aminoalkyl, an amino acid, and a peptide of 2-8 amino acids.

43. (Amended and Renumbered Original Claim 76) The product of claim 39, wherein the substituents are alkyl or phenyl.

44. (Amended and Renumbered Original Claim 77) The product of claim 39 made by the process further comprising the step of complexing a metal to at least one of the substituents.

45. (Twice Amended and Renumbered Original Claim 78) The product of claim 44, wherein the metal is selected from the group consisting of Group VIB ~~VI-B~~ metals and Group VIIIB ~~VIII-B~~ metals.

46. (Amended and Renumbered Original Claim 79) The product of claim 39, wherein the amount of substituent bonded to carbon atoms of the single wall carbon nanotube is at a substituent to carbon ratio of from (a) one substituent to about 26 carbon atoms to (b) one substituent to about two carbon atoms.

47. (Amended and Renumbered Original Claim 80) The product of claim 46, wherein the amount of substituent bonded to the carbon atoms of the single wall carbon nanotube is at the substituent to carbon ratio of from (a) one substituent to about ten carbon atoms to (b) one substituent to about two carbon atoms.

48. (Amended and Renumbered Original Claim 81) The product of claim 47, wherein the amount of substituent bonded to the carbon atoms of the single wall carbon nanotube is at the substituent to carbon ratio of from (a) one substituent to about three carbon atoms to (b) one substituent to about two carbon atoms.

49. (Amended and Renumbered Original Claim 82) The product of claim 39, wherein said step of fluorinating the single wall carbon nanotube comprises exposing the single wall carbon nanotube to a fluorinating agent.

50. (Twice Amended and Renumbered Original Claim 83) The product of claim 49, wherein the fluorinating agent is selected from the group consisting of fluorine, ClF_3, BrF_3, IF_5, XeF_2, XeF_4, AgF_2, and MnF_3.

51. (Amended and Renumbered Original Claim 84) The product of claim 49, wherein the fluorinating step occurs at a reaction temperature up to about 500°C.

52. (Amended and Renumbered Original Claim 85) The product of claim 49, wherein the reaction temperature is between about 250°C and about 400°C.

53. (Amended and Renumbered Original Claim 86) A derivatized single wall carbon nanotube made by the process comprising the steps of:

(a) reacting the single wall carbon nanotube with a fluorinating agent;

(b) solvating the single wall carbon nanotube ~~from step (i)~~; and

(c) reacting the fluorinated single wall carbon nanotube with a compound containing a substituent to covalently bond the substituent to the single wall carbon nanotube.

54. (Amended and Renumbered Original Claim 87) The derivatized single wall carbon nanotube of claim 53, wherein the substituents are selected from the group consisting of alkyl, acyl, aryl, aralkyl, halogen, substituted thiol, unsubstituted thiol, substituted amino, unsubstituted amino, hydroxy, and OR', wherein R' is selected from the group consisting of hydrogen, alkyl, acyl, aryl, aralkyl, halogen, substituted thiol, unsubstituted thiol, substituted amino, unsubstituted amino, a linear carbon chain, and a cyclic carbon chain.

55. (Amended and Renumbered Original Claim 88) The derivatized single wall carbon nanotube of claim 54, wherein the linear carbon chain or the cyclic carbon chain or both is substituted with at least one heteroatom.

56. (Amended and Renumbered Original Claim 89) The derivatized single wall carbon nanotube of claim 54, wherein the linear carbon chain or the cyclic carbon chain or both is substituted with one or more of the group consisting of =O, =S, hydroxy, an aminoalkyl, an amino acid, and a peptide of 2-8 amino acids.

57. (Amended and Renumbered Original Claim 90) The derivatized single wall carbon nanotube of claim 53, wherein the fluorinating agent is selected from the group consisting of fluorine, ClF_3, BrF_3, IF_5, XeF_2, XeF_4, AgF_2, and MnF_3.

58. (Amended and Renumbered Original Claim 91) The derivatized single wall carbon nanotube of claim 53, wherein the solvation step comprises sonication.

59. (Amended and Renumbered Original Claim 92) The derivatized single wall carbon nanotube of claim 53, wherein the solvation step comprises using a solvent selected from the group consisting of an alcohol, $CHC1_3$, and dimethylformamide.

60. (Amended and Renumbered Original Claim 93) The derivatized single wall carbon nanotubes of claim 59, wherein the alcohol is selected from the group consisting of methanol, ethanol, 2,2,2-trifluoroethanol, 2-propanol, 2-butanol, n-pentanol, n-hexanol, cyclohexanol and n-heptanol.

61. (Amended and Renumbered Original Claim 94) The derivatized single wall carbon nanotube of claim 53, wherein the amount of substituent bonded to carbon atoms of the single wall carbon nanotube is at a substituent to carbon ratio of from (a) one substituent to about 26 carbon atoms to (b) one substituent to about two carbon atoms.

62. (Amended and Renumbered Original Claim 95) The derivatized single wall carbon nanotube of claim 61, wherein the amount of substituent bonded to the carbon atoms of the single wall carbon nanotube is at a substituent to carbon ratio of from (a) one substituent to about ten carbon atoms to (b) one substituent to about two carbon atoms.

63. (Amended and Renumbered Original Claim 96) The derivatized single wall carbon nanotube of claim 62, wherein the amount of substituent bonded to the carbon atoms of the single wall carbon nanotube is at the substituent to carbon ratio of from (a) one substituent to about three carbon atoms to (b) one substituent to about two carbon atoms.